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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,739	04/11/2001	Dana Eagles	2126-165	3502
20999	7590	01/21/2004	EXAMINER	
FROMMER LAWRENCE & HAUG 745 FIFTH AVENUE- 10TH FL. NEW YORK, NY 10151			WRIGHT, ANDREW D	
			ART UNIT	PAPER NUMBER

3617

DATE MAILED: 01/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

Office Action Summary	Application No.	Applicant(s)	
	09/832,739	EAGLES ET AL.	
	Examiner	Art Unit	
	Andrew Wright	3617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29, 31-45, 47, 49-76 and 80-82 is/are pending in the application.
- 4a) Of the above claim(s) 49-61, 75 and 76 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-11, 13-17, 27-29, 31-45, 47, 62-66 and 80-82 is/are allowed.
- 6) ☒ Claim(s) 1-6, 12, 18-26, 67 and 70-74 is/are rejected.
- 7) ☒ Claim(s) 68 and 69 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>19</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission, filed on 11/3/03. Claims 29, 33, 36, 39, 80, 81, and 82 are indicated in the current claim listing as "(Previously presented)" and are not discussed in the "Remarks". Prior to the filing of the RCE, these claims were objected to as being dependent upon a rejected base claim (Final Rejection dated 3/7/03). Inspection of the claims submitted with the RCE shows that the claims are not the same as those that were pending at the time of the Final Rejection, and therefore are not previously presented. It is clear from the remarks of the not-entered after final amendment (Paper #17, 5/27/03) and the current treatment of identically situated claims 7, 11, 14, 17, and 27, that claims 29, 33, 36, 39, 80, 81, and 82 are currently amended to be re-written in independent form. Therefore, claims 29, 33, 36, 39, 80, 81, and 82 will be treated as currently amended with the same remarks as claims 7, 11, 14, 17, and 27.

Claim Objections

2. Claim 29 is objected. Claim 29 is an apparatus claim that recites a method step: "comprises weaving in integrally...". For examination it will be assumed that the limitation is structural: "comprises reinforcing elements that are woven in integrally as part of the fabric at predetermined...". The method step recitation should be re-written in apparatus form. Appropriate correction is required.

3. Claim 11 has a similar method step recitation ("collapsing the end upon itself...") that should be re-written in apparatus form.
4. Claim 14 has a similar method step recitation ("collapsing, folding and sealing an end...") that should be re-written in apparatus form.
5. Claim 33 has a similar method step recitation ("collapsing the end upon itself...") that should be re-written in apparatus form.
6. Claim 36 has a similar method step recitation ("collapsing, folding and sealing an end...") that should be re-written in apparatus form.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6, 12, and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawthorne et al. (US 2,997,973) in view of Sharpless et al. (US 5,421,128). Hawthorne discloses a fluid containment vessel for use with fluid cargo. The vessel comprises an elongate, tubular structure made of seamless, woven fabric (column 1, lines 64-72). Hawthorne discloses the practice of proofing the woven material to make it impervious to the liquid carried within. The tubular structure has front and rear ends, as seen in the figures. The front and rear ends are shaped into a conical form and are further provided with end members (12) for sealing. The structure

has filling and emptying pipes that are flexible and blended into the fabric of the vessel (column 1, lines 33-34). Hawthorne does not disclose at least one longitudinal stiffening beam, said beam being integral with the tubular structure. Sharpless discloses a woven, elongated, tubular structure that has longitudinal stiffening beams. Sharpless discloses that the beams may take the form of reinforcing fibers (4) woven into the fabric (3), or reinforcing tape (8) bonded to the outer surface of the fabric (3). The reinforcing fibers are considered integral with the fabric since they are woven together. The reinforcing fibers enhance the bending stiffness of the tubular structure. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hawthorne by using interwoven longitudinal reinforcing beams. The motivation would be to enhance bending stiffness so as to reduce the common problem of oscillation of the vessel. Beams in the form of reinforcing tape bonded to the outer surface of the fabric would be subject to the pressurization and depressurization of the atmosphere of the vessel. The internal pressure of the tubular structure is a pressure of the vessel. A beam which is located externally can be subject to atmospheric pressurization and depressurization independent of the internal pressure of the tubular structure.

9. Further regarding claim 1, the following language is suggested: "...subject to pressurization and depressurization by selective inflation and deflation with a pressurized gas or liquid." Support for this language is found in pages 28-30 of the specification.

10. Regarding claim 2-4, Sharpless discloses a plurality of stiffening beams, including two that are equidistant from each other on the tubular structure with a third placed intermediate the two (figure 4).
11. Regarding claim 5, Sharpless discloses that the beams are continuous.
12. Regarding claim 6, Sharpless does not disclose that the beams are sectional. One skilled in the art, however, would have the knowledge and capability to utilize sectional instead of continuous reinforcing beams. Sectional beams would provide the same bending stiffness as continuous beams. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by using sectional beams. The motivation would be to optimize manufacturing processes.
13. Regarding claim 12, Hawthorne provides an end cap for sealing.
14. Regarding claims 18-20, Sharpless discloses at least ten longitudinal fibers (4) in figure 4. Two can be considered to be longitudinal stiffening beams, while the others can be considered as fiber reinforcements. Sharpless discloses that the fibers are Kevlar (polyaramid) and the weave can be seen in figure 3.
15. Regarding claims 21-24, Hawthorne discloses that the fabric weave is proofed to make it impervious to the liquid carried within. Hawthorne disclose the use of elastomers and resins as the proofing material that is applied to the woven fabric. This falls within the claimed group.

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16. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified invention of Hawthorne ('973) as applied to claims 1 and 19 above, respectively, and further in view of Lowe (US 4,668,545). Hawthorne does not disclose the use of fibers with low melting points to fill the voids in the weave. Lowe discloses a shaped woven article that comprises holt-melt fibers that make the fabric impervious. Holt-melt fiber is known in the art and is an alternate way of coating a fabric as opposed to spray or dip coating or providing an inner bag. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to use hot-melt fibers to create the impervious coating. The skilled artisan would be motivated to use hot-melt coating to optimize design parameters such as manufacturing costs and methods.

17. Claims 67 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawthorne et al. (US 2,997,973) in view of Savage (EP 0,832,032 B1) and Lowe (US 4,668,545). Hawthorne discloses a fluid containment vessel for use with fluid cargo. The vessel comprises an elongate, tubular structure made of seamless, woven fabric (column 1, lines 64-72). Hawthorne discloses the practice of proofing the woven material to make it impervious to the liquid carried within. The tubular structure has front and rear ends, as seen in the figures. The front and rear ends are shaped into a conical form and are further provided with end members (12) for sealing. The structure has filling and emptying pipes that are flexible and blended into the fabric of the vessel (column 1, lines 33-34). Hawthorne does not disclose two tubular structures and a

woven flat fabric woven seamless with the two and positioned there between. Savage discloses flexible barges for fluid cargo, similar to that of Hawthorne. Savage shows that multiple vessels can be linked in various configurations. Savage shows two vessels in a side-by-side configuration in figure 3. Savage does not disclose the particular means for connecting the two vessels. Lowe discloses seamless woven fabric structures. Lowe shows two tubes that are side-by-side and connected by a woven flat fabric that is woven seamless with the two tubes (figure 6). Since Hawthorne already uses woven seamless structure, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Hawthorne by using two tubes (as suggested by Savage) connected by a woven flat fabric that is woven seamless with the two tubes (as suggested by Lowe). The motivation would be to reduce transport costs by towing more than one vessel.

18. Regarding claim 70, the tubular structure of Hawthorne is generally pod shaped.

19. Claims 71-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hawthorne et al. (US 2,997,973) in view of Ashton (GB 826,301). Hawthorne discloses a fluid containment vessel for use with fluid cargo. The vessel comprises an elongate, tubular structure made of seamless, woven fabric (column 1, lines 64-72). Hawthorne discloses the practice of proofing the woven material to make it impervious to the liquid carried within. The tubular structure has front and rear ends, as seen in the figures. The front and rear ends are shaped into a conical form and are further provided with end members (12) for sealing. The structure has filling and emptying pipes that are

flexible and blended into the fabric of the vessel (column 1, lines 33-34). Hawthorne does not disclose at least one longitudinal stiffening beam held in a pocket, said pocket being woven seamlessly with the woven fabric. Ashton discloses a flexible fluid containment vessel that comprises longitudinal stiffening beams (7) disposed in pockets (8 and 9) on the outside of the vessel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Hawthorne by employing stiffening beams as taught by Ashton. The motivation would be to reduce harmful oscillation of the towed vessel. Furthermore, it would have been obvious to seamlessly weave the pockets to the woven fabric of the tubular structure. Ashton does not disclose a method of attachment. Seamless weaving of the pockets to the fabric would be within the scope of knowledge and capability of the skilled artisan who constructed the entire vessel of a seamlessly woven fabric. It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by weaving the pockets to the tubular fabric. The motivation would be to produce a unitary structure without the use of adhesives. Such a structure would create less drag than one with externally affixed pockets.

20. Regarding claims 72 and 73, Ashton discloses a plurality of stiffening beams. Ashton does not disclose the spacing of the beams. However, a symmetric spacing about the circumference of the tubular vessel is an obvious option. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the invention of Hawthorne by using at least two beams

positioned equidistant about the tubular structure. The motivation would be to create a balanced vessel.

21. Regarding claim 74, the beams disclosed by Ashton are continuous and each individual pocket is continuous.

Allowable Subject Matter

22. Claims 7-11, 13-17, 27-29, 31-45, 47, 62-66, and 80-82 are allowed.

23. Claims 68 and 69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

24. Applicant's arguments with respect to claims 1, 67, and 71 have been considered but are moot in view of the new ground(s) of rejection.

25. It is noted that in the Remarks, applicant states that the claims have been amended along the lines suggested by the examiner in the Advisory Action. The remarks in the Advisory Action were not suggestions of allowable subject matter, but rather were explanations of why applicant's arguments were not persuasive.

Conclusion

26. Any inquiry concerning this communication should be directed to examiner Andrew D. Wright at telephone number (703) 308-6841. The examiner can normally be reached Monday-Friday from 9:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joe Morano, can be reached at (703) 308-0230. The fax number for official communications is 703-872-9306. The fax number directly to the examiner for unofficial communications is 703-746-3548.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at (703) 308-1113.

Andrew D. Wright
Patent Examiner
Art Unit 3617

 1/19/04